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Trends in Bonus Payments for Physician Services to Rural Medicare Beneficiaries

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Health

PREFACE

The Health Care Financing Administration (HCFA) contracted with RAND to perform an analysis of Medicare special payments to rural providers and implications for access and costs of care for rural Medicare beneficiaries, with a focus on underserved areas. The payment provisions examined include (1) bonus payments to physicians in rural HPSAs; (2) reimbursements to rural health clinics and federally qualified health centers; (3) special payments for sole community hospitals, Medicare-dependent hospitals, rural referral centers, EACH/RPCH hospital networks, and Medical Assistance Facilities; and (4) capitation payments in rural counties.

This report presents the findings of our analysis of trends in Medicare bonus payments for physician services to rural beneficiaries. Section 1 presents background on rural issues and the history of Medicare bonus payment policy, and Section 2 describes our analytic methods. In Section 3, we examine trends in Medicare spending for both basic payments and bonus payments for physician services, including exploration of spending for primary care providers and primary care services. Section 4 contains a discussion of these findings and implications for further Medicare policy regarding bonus payments.

This draft report is one of four reports being prepared from our analyses of Medicare special payment policies for rural providers. The other reports address trends during the 1990s in rural hospitals with special Medicare payment designations, payments for rural health clinics and Federally Qualified Health Centers, and adjusted average per capita costs (AAPCCs) for Medicare beneficiaries for urban and rural counties.

The work presented in this report was performed under Task 11 of Health Care Financing Administration Contract Number HCFA-500-96-0056, Project Officer William Buczko.

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SUMMARY

The Health Care Financing Administration (HCFA) contracted with RAND to analyze Medicare special payments to rural providers and their implications for access and costs of care for rural Medicare beneficiaries. The purpose of the research is to provide a comprehensive overview of Medicare special payments to rural providers over the last decade, to (1) estimate the relative contribution of these special payments to the Medicare capitation rates in rural counties and (2) help identify and assess alternative approaches to assuring access. The focus of the study is on services in geographic areas designated by the Health Resources and Services Administration (HRSA) as either Health Professional Shortage Areas (HPSAs) or Medically Underserved Areas (MUA/Ps).

In the first phase of the project, historical trends in payments under several special payment policies are being analyzed. The special payment provisions being examined include:

- Capitation payments in rural counties, especially in underserved areas;
- Reimbursements to Rural Health Clinics and Federally Qualified Health Centers;
- Special payments for sole community hospitals, Medicare-dependent hospitals, rural referral centers, EACH/RPCH hospital networks, and Medical Assistance Facilities; and
- Bonus payments to physicians in rural HPSAs;

This preliminary report presents the results of the analysis of trends in Medicare bonus payments for physician services to rural beneficiaries from 1992 through 1998.

BACKGROUND

Access to health care services for the rural elderly has been an ongoing source of concern for policymakers. Rural communities face difficulties recruiting and retaining physicians, due to a number of factors that make physicians reluctant to locate in rural areas (PPRC, 1991). Rural physician supply has increased over the last two decades but growth has been slower in rural areas than in urban areas. With the exception of family practice physicians, the supply of

physicians in metropolitan counties is between two and three times the supply in non-metropolitan counties (Rosenblatt & Hart, 1999).

To encourage physicians with established practices to relocate to rural areas, a payment incentive program was identified as a method to help offset the opportunity costs associated with relocation and starting a new practice (PPRC, 1992). Congress enacted a bonus payment program in 1989 that provided additional payments to physicians, in addition to the amount paid by Medicare under the Physician Fee Schedule, for providing health care services in Health Professional Shortage Areas (HPSAs). The original program gave five percent bonus payments to physicians providing care in rural HPSAs. In 1991, the bonus payment was increased to ten percent and eligibility was expanded to include reimbursement for services provided by physicians in urban HPSAs.

Medicare began reimbursing NPPs as independent providers in rural areas in 1991.[1] In 1991, two bills were introduced in the Senate to amend the Social Security Act to increase Medicare reimbursement for all NPPs to 97 percent of the Physician Fee Schedule amount and to extend bonus payments to their services as well.[2] Neither bill passed. To our knowledge, there have been no subsequent legislative attempts to extend bonus payments to NPPs, although the PPRC continued to support this policy through the mid-1990s (PPRC, 1994b).

Eligibility for many of the rural programs and payments being addressed by this project requires service providers to operate in underserved areas, which are designated based on Congressional provisions for Medically Underserved Areas/Populations (MUA/P) and Health Professional Shortage Areas (HPSAs). These areas are designated by the Health Resources and Services Administration (HRSA) through its regulatory process. HRSA reviews HPSA designations every three years, adding or deleting area designations as appropriate. In 1997, roughly 64 percent of counties outside of MSAs contained at least one region officially designated as a HPSA and roughly 10 percent of non-MSA counties had no active primary care physician (NC-RHRPAC, 1998). In response to the Health Centers Consolidation Act of 1996,

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[1] Before this time, PAs and NPs could not bill Medicare directly for their services, although physicians and clinics were paid for their services. With the passage of the Balanced Budget Act of 1997, PAs and NPs in urban areas can also now bill Medicare directly for services.

[2] 102nd Congress, 1st Session, Bill Tracking S.2103, S2104.

HRSA is revising the criteria and procedures for designating MUA/Ps and HPSAs, with plans to publish the new provisions during 2001.

METHODS AND DATA

We used physician/supplier claims data for the 5 percent beneficiary sample to examine trends in basic Medicare payments and bonus payments for physician services provided to non-metropolitan beneficiaries. Using claims data merged with geographic data from the Area Resource File (ARF), we identified services provided to beneficiaries located in rural counties, and classified them according to county location based on the Urban Influence Codes. Characteristics of these services were profiled for 1992, 1994, 1996, and 1998.

Bonus payments were calculated as 10 percent of what Medicare paid for physician services eligible for the bonus, as defined by the HCPCS modifier ('QB' or 'QU') for the service provided. For each claim with a modifier, the line item payment was multiplied by 0.1 to get the bonus payment for that claim. These bonus payments were summed and multiplied by 20 to estimate the total bonus payments for physicians providing services for all beneficiaries residing in non-metropolitan counties.

An additional set of analyses was performed using claims for both physician and NPP services to examine the extent to which NPPs provided services for rural Medicare beneficiaries. We analyzed Medicare spending on NPP services as a share of total spending on physician and NPS services by HPSA designation and non-metropolitan county categories.

All trends in utilization and spending on health care services were analyzed for Medicare beneficiaries residing in rural areas, *by beneficiary location* rather than physician practice location or site of care. We chose this analytic approach for reasons of both policy emphasis and data requirements. The policy focus of these analyses is on access to care for rural beneficiaries, which argues for this approach. Furthermore, the physician/supplier claims data only identify the county of beneficiary residence and zip code of provider location. Therefore, it was not possible to define county of service (and therefore rural or urban HPSA), and data requirements for establishing rural provider locations for 4 years of claims data would be substantial. This approach allowed us to capture basic Medicare payments and bonus payments for physician

services that rural beneficiaries obtained in urban HPSAs. Conversely, claims for services provided in rural HPSAs for urban beneficiaries were lost to our analyses.

SUMMARY OF FINDINGS

While Medicare spending for physician services to non-metropolitan beneficiaries increased steadily during the 1990s, this trend did not translate into the same growth pattern for bonus payments. After substantial increases during the first half of the decade, total bonus payments began to level off between 1994 and 1996 and then declined by 13.3 percent between 1996 and 1998. This trend also is reflected in bonus payments measured as a percentage of basic Medicare payments, which were 0.5 percent of basic payments in 1992, 0.7 percent in 1994, 0.6 percent in 1996, and 0.5 percent in 1998. Of note, these percentages of less than 1 percent highlight that bonus payments represent an extremely small share of total Medicare costs for physician services to non-metropolitan beneficiaries.

As expected, the majority of bonus payments for non-metropolitan beneficiaries were paid for those residing in HPSAs, but substantial shares also were paid for those in non-HPSA locations. For each of the four years studied, close to an estimated 60 percent of bonus payments were made for physician services to beneficiaries residing in whole-county HPSAs, and 30 percent were for beneficiaries in partial-county HPSAs. A relatively substantial balance of 10 percent of bonus payments was attributable to services for beneficiaries not residing in non-HPSA counties. An unknown percentage would be added to this portion for beneficiaries in partial-county HPSAs but not in the HPSA portion of the county (which would be subtracted from the percentage for partial-county HPSAs). These findings suggest that bonus payments may have contributed to access on a broader geographical scale than the strict limits of the HPSA boundaries, possibly reflecting the distances that rural beneficiaries often travel for care.

We also found that bonus payments had targeted primary care. For example, 55.9 percent of total bonus payments in 1992 were paid to primary care physicians, although their shares decreased steadily over time to reach 49.7 percent in 1998. In 1992, payments for primary care services represented 14.0 percent of total basic Medicare payments for physician services and 29.7 percent of total bonus payments for beneficiaries in non-metropolitan counties. By 1998, these shares had grown to 18.6 percent of total Medicare payments and 37.0 percent of total

bonus payments. Thus, both the levels and growth trends were higher for bonus payments made for primary care services.

The analysis of Medicare payments for non-physician practitioner services indicates that NPP services billed directly to Medicare were a very small, but growing fraction of Medicare payments for physician/NPP services (sum of physician and NPP services) provided to Medicare beneficiaries in non-metropolitan areas. NPP payments in 1992 were 1.6 percent of total payments for physicians/NPPs, and had increased to 1.8 percent of the total by 1998. These findings reflect a situation where NPP services are likely to be billed to Medicare by physicians rather than by the NPPs. Physicians can be paid 100 percent of the Physician Fee Schedule rate whereas NPPs would be paid only 85 percent of this rate if they billed independently. In addition, many NPPs work in clinics or group practices, RHCs, FQHCs, or C/MHCs, and their services are billed by the clinic rather than by the individual NPPs. As a result, the Medicare claims data for services directly billed by NPPs represent only a small fraction of Medicare spending for NPP services.

IMPLICATIONS

The trends in physician bonus payments during the 1990s offer some encouraging policy insights while at the same time they raise issues regarding the ongoing effectiveness of the bonus payment program. Some evidence was found that this program has been successful in supporting primary care providers and services, and possibly, has enhanced services for beneficiaries residing in the more remote parts of our country, especially those in HPSAs. On the other hand, low levels of bonus payments in general, coupled with declines in those amounts since 1994, bode poorly for its future potential to support physicians practicing in rural areas and, thus, to protect access for rural Medicare beneficiaries. For these goals to be achieved, physicians must use the bonus payments, yet they clearly are not taking advantage of the extra payment amounts available to them. If bonus payments continue to decline in the face of steady increases in basic Medicare payments for physician services, their effects will be further diluted.

Section 1.
INTRODUCTION

The Health Care Financing Administration (HCFA) has contracted with RAND to perform an analysis of Medicare special payment policies for rural providers. During the first year of the project, we have analyzed historical trends in payments under several such policies. In the remaining project period, we will use this information to analyze implications for future Medicare payment policy. The special payment provisions being examined include (1) bonus payments to physicians in rural HPSAs; (2) reimbursements to rural health clinics and federally qualified health centers; (3) special payments for sole community hospitals, Medicare-dependent hospitals, rural referral centers, EACH/RPCH hospital networks, and Medical Assistance Facilities; and (4) capitation payments in rural counties, especially in underserved areas.

This report presents the preliminary findings of our analysis of trends in payments made by Medicare through the physician bonus payment program for services provided in rural Health Professional Shortage Areas (HPSAs).[3] Our goal is to provide a comprehensive overview of bonus payments in rural underserved areas over the last decade, in which we (1) describe the total magnitude of bonus payments made by Medicare and changes in those payments through the 1990s, and (2) explore what implications these trends may have for access to medical services by rural Medicare beneficiaries. Trends in the basic Medicare payments and bonus payments for physicians services are described by HPSA designation and by categories of rural counties. Additionally, we examine trends in the proportions of basic and bonus payments spent by Medicare on primary care services and primary care physicians versus specialists.

BACKGROUND

Access to health care services for the rural elderly has been an ongoing source of concern for policymakers. Rural communities face difficulties recruiting and retaining physicians, due to a number of factors that make physicians reluctant to locate in rural areas (PPRC , 1991). Rural

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[3] This program is also referred to as the Medicare Payment Incentive Program.

physician supply has increased over the last two decades but growth has been slower in rural areas than in urban areas. With the exception of family practice physicians, the supply of physicians in metropolitan counties is between two and three times the supply in non-metropolitan counties (Rosenblatt & Hart, 1999).

New analyses suggest that the "effective" supply of rural physicians has not grown significantly and that the supply of family practice physicians, the most numerous in rural areas, has actually decreased by 9 percent over the last ten years (Ricketts et al., 2000). This study estimated physician supply based on estimates of professional activity from the Socioeconomic Monitoring System of the American Medical Association rather than "head counts," the usual method for estimating physician supply. It suggests that current measures of underserved areas may actually underestimate the problem of physician supply.

As the Physician Payment Review Commission (PPRC) noted in its 1991 report to Congress, some efforts to increase the supply of physicians may be best addressed through recruitment of individuals from rural areas to medical schools. In a study of rural physician supply, Rabinowitz et al. (1999) found that rural background was the most important predictor of physician location to a rural practice. In a follow-up study, Rabinowitz and Paynter (2000) stated that "(m)edical schools...can have a major impact on the number of rural physicians they produce by acting not only as a pipeline or conduit to residency programs, but also as a control valve, beginning as early as the admissions process" (p. 249).

Context: National Programs to Increase Rural Physician Supply

When examining trends in Medicare bonus payments for rural physicians, this program should be considered in the context of several programs intended to protect and increase access to physician services in underserved rural and inner-city areas. Other important programs, for example, are the National Health Service Corps (NHSC), establishment of community and migrant health centers, Medicare designation and payment of rural health clinics and Federally Qualified Health Centers, and changes to Medicare policy that have made certain non-physician practitioners (NPPs) eligible for direct reimbursement.

The NHSC is a federal program intended to increase the presence of physicians serving rural and inner-city populations. Established in 1970 and operated by the Health Resources and Services Administration (HRSA), this program offers scholarships and a loan repayment program to medical students in exchange for their service after graduation in a HPSA for the same number of years for which tuition support was provided. As a result of reports forecasting an oversupply of physicians, the NHSC was cut back considerably in 1981. The predicted oversupply never translated into an increased supply of physicians in underserved areas. Congress subsequently enacted the NHSC Revitalization Amendment Act in 1990 (PL 101-597), which revised and extended the NHSC and resulted in increases in appropriations to the program.

While efforts were made to expand the NHSC, it still only meets 12 percent of the need for primary health care providers in underserved areas (Politzer et al., 2000). However, analysis of data about NHSC scholarship recipients from the AMA Masterfile suggests that the program has helped to reinforce and build a health care provider infrastructure in rural areas. This study found that 20 percent of physicians remained in the rural area they were originally assigned to under NHSC and an additional 20 percent were in some other rural area (Cullen et al., 1997).

Community and migrant health centers (C/MHCs), administered by the Bureau of Primary Health Care in HRSA, were established to increase access to medical care in underserved communities. Often C/MHCs are staffed with providers serving in rural areas through the NHSC (Earle-Richardson & Earle-Richardson, 1998). The C/MHCs are part of HRSA's Consolidated Health Centers Program, which provides grants to 391 centers operating about 1482 clinics in rural areas (Bureau of Primary Health Care, 2001).

Two Medicare special payment programs for designated types of clinics were established to support providers in underserved areas. Payments for Federally Qualified Health Centers built upon the C/MHC program, providing a mechanism for these clinics to obtain cost-based Medicare funding. In addition, rural health clinics were designated through which rural physicians and NPPs could organize as clinics to obtain cost-based payments. We present results of our analysis of trends in payments for these two types of clinics in a separate report.

State licensure provisions and Medicare payment arrangements have supported an expanded role for non-physician practitioners in supplementing and substituting for physician

services in underserved areas. NPPs include physicians' assistants (PAs), nurse practitioners (NPs), certified nurse midwives (CNMs), certified clinical nurse specialists (CCNSs), and certified nurse anesthetists (CNAs). According to a PPRC report, a larger percentage of these practitioners serve in rural areas than the percentage of physicians (PPRC, 1994a). In fact, the PA and NP professions evolved out of the need for medical professionals in areas of the country suffering from health care shortages (Baer & Smith, 1999), with growing numbers of states licensing them to perform expanded clinical functions. The NPPs' role in rural areas is increasingly important because their training in many cases emphasizes primary care services.

Medicare began reimbursing NPPs as independent providers in rural areas in 1991.[4] In 1991, two bills were introduced in the Senate to amend the Social Security Act to increase Medicare reimbursement for all NPPs to 97 percent of the Physician Fee Schedule amount and to extend bonus payments to their services as well.[5] Neither bill passed. To our knowledge, there have been no subsequent legislative attempts to extend bonus payments to NPPs, although the PPRC continued to support this policy through the mid-1990s (PPRC, 1994b).

Medicare Physician Bonus Payments

Numerous studies and surveys have identified various influences on physicians' decisions about practice location. Income potential alone is not likely to be the deciding factor in determining practice location. The PPRC (1991) cited proximity to hospital facilities; access to continuing medical education; and the presence of a physician community, which can provide the opportunity for joining a group practice and get on-call coverage as influences on rural physician decisions about where to practice medicine. To encourage physicians with established practices to relocate to rural areas, a payment incentive program was identified as a method to help offset the opportunity costs associated with relocation and starting a new practice (PPRC, 1992).

Congress enacted a bonus payment program in 1989 that provided additional payments to physicians, in addition to the amount paid by Medicare under the Physician Fee Schedule, for

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[4] Before this time, PAs and NPs could not bill Medicare directly for their services, although physicians and clinics were paid for their services. With the passage of the Balanced Budget Act of 1997, PAs and NPs in urban areas can also now bill Medicare directly for services.

[5] 102nd Congress, 1st Session, Bill Tracking S.2103, S2104.

providing health care services in Health Professional Shortage Areas (HPSAs). The original program gave five percent bonus payments to physicians providing care in rural HPSAs. In 1991, the bonus payment was increased to ten percent and eligibility was expanded to include reimbursement for services provided by physicians in urban HPSAs.

HEALTH CARE SHORTAGE AREAS

To be eligible for many of the rural payment programs being addressed by this project, service providers must operate in underserved areas. These areas are designated by HRSA based on Congressional provisions regarding Medically Underserved Areas/Populations (MUA/P) and Health Professional Shortage Areas (HPSAs). HRSA re-examines and modifies HPSA designations at least every three years, as required by federal law. It also has added new MUA/P designations periodically through the 1990s, but no existing MUA designations have been deleted.

In response to requirements of the Health Centers Consolidation Act of 1996, HRSA is revising the criteria and procedures for designating MUA/Ps and HPSAs. Earlier proposed changes provided for the HPSAs to be a subset of the MUA/Ps and use of a consistent set of criteria to determine the two designations (HRSA, 1998). In response to extensive comments received on these proposed rules, HRSA is making substantial changes to the methodology, with plans to publish a revised proposed rule in 2001.

MEDICARE REIMBURSEMENT FOR PHYSICIAN SERVICES

Physicians providing services to beneficiaries in the Medicare fee-for-service sector are paid for those services through the Medicare Part B program (supplementary medical insurance). Medicare Part B carriers are HCFA contractors that process claims submitted by physicians for reimbursement. Beginning in 1992, the Physician Fee Schedule was implemented to establish payment amounts for all physicians' services based on the relative value for the service (the amount of resources required to provide the service, relative to other services), a conversion factor (a national payment amount or dollar multiplier established to achieve target budgets for Medicare), and geographic adjustment factors (adjusters reflecting variations across the country in physicians' costs for service inputs, e.g., staff salaries).

Before the Physician Fee Schedule was developed, Medicare reimbursement was determined by the physician's historical usual and customary charges. This resulted in some high-technology services provided by specialists receiving higher reimbursement than the "softer" diagnostic and care management services provided by primary care physicians. The implementation of the fee schedule yielded greater parity in reimbursement across physician specialties and geographic regions (PPRC, 1992).

Each fall, HCFA provides every Part B carrier with an updated Medicare Physician Fee Schedule Database that determines reimbursement for physicians' services and select other provider services. The database defines:

- services paid under the Physician Fee Schedule;
- global diagnostic services that have both professional and technical components;
- diagnostic services considered professional or technical only;
- services payable to an assistant surgeon;
- code status (updating providers on changes to procedure codes and modifiers);
- surgical procedures qualifying for multiple, bilateral, team, or co-surgery payment; and
- payable medical supplies (Wisconsin Physician Services, 2000).

PHYSICIAN BONUS PAYMENTS

The legislation that established the physician bonus payment program states that *physician services* are eligible for a bonus payment if they are provided in a HPSA and the patient served is covered by Medicare Part B (Supplemental Medical Insurance). Physician services that comply with these requirements will be paid an amount equal to 10 percent of the amount paid by Medicare for the service provided. Bonus payments are not included with the physician's reimbursement for the services provided, but are paid separately by the carriers on a quarterly basis. This program is paid for out of the Federal Supplemental Medical Insurance Trust Fund (42*USC*13951).

Health care providers eligible to receive Medicare bonus payments include medical doctors, doctors of osteopathy, dentists, podiatrists, licensed chiropractors, and optometrists. NPPs are not eligible for the bonus payment program. "Physician services" refers to professional services performed by physicians, including home, office, or institutional visits, surgery,

consultation, and interpretation of laboratory or radiology tests. Bonuses are not paid for services reimbursed through Hospital Insurance (Part A) or services provided by managed care contracts. It is not required that the physician's practice be located in a HPSA nor that the Medicare beneficiary reside in a HPSA, only that the service be provided in a HPSA.

Of significance, the bonus payment is based on the amount that Medicare pays rather than the total payment allowed by Medicare (allowed charge). The bonus payment program was designed to not burden the Medicare beneficiary who receives services in a HPSA – if the bonus payment were based on the total allowed amount, the beneficiary would then be responsible for paying some of that bonus to the provider.

How Bonus Payments Are Made

The Part B carriers are responsible for administering the physician bonus payment program. To our knowledge, no regulations were written with respect to the implementation and administration of the program. Rules for identifying claims eligible for the bonus and for distributing bonus payments are found in the Medicare Carrier's Manual, which instructs carriers regarding all reimbursement issues related to Medicare. With respect to the bonus payment program, carriers are responsible for:

- informing the physician community of the provisions of the Medicare Incentive Payment Program;
- detailing to interested physicians those locations which are HPSAs and the proper manner in which to code claims to qualify for the incentive payment;
- modifying their claims processing system to recognize and appropriately handle eligible claims;
- paying physicians the bonus payments; and
- performing post-payment review samples of paid claims to ensure that they were eligible for the bonus payment (HCFA Carrier's Manual, on Medicare web site).

Physicians are required to indicate that the services they provided are eligible for the bonus payment by including a modifier to the HCFA Common Procedure Coding System

(HCPCS) codes.[6] The modifier identifying services provided in a rural HPSA is 'QB' and the modifier for services provided in an urban HPSA is 'QU'. When one of these modifiers is present, the carrier calculates the bonus payment as 10 percent of the amount paid by Medicare.[7]

Services provided by physicians, reflected in the HCPCS codes, may include both professional and technical components billed globally, professional services only, or technical services only. Only the professional component of a physician's service is eligible for a bonus payment. The Professional Component/Technical Component (PC/TC) indicator field of the Medicare Physician Fee Schedule Database defines professional services eligible for bonus payments. Claims with a PC/TC indicator of '0' (Physician Service) are automatically eligible for the bonus payment. For a globally billed service (PC/TC indicator equals '1') to be eligible for a bonus payment, it must include both the bonus payment modifier and a modifier indicating that the professional component of the service is being billed for in the claim (modifier code '26'). Globally billed claims with no supplemental modifier or a technical component modifier ('TC') are ineligible for a bonus payment. If a HCPCS code reflecting a professional service only is unavailable for the service provided, the global HCPCS code must include the professional component modifier to be eligible for a bonus payment.

Carriers are responsible for reviewing claims for which a bonus was paid to identify incorrectly awarded payments. The Carrier must identify physicians who received a bonus payment and rank them from highest to lowest according to the total bonus amounts they received for the quarter. The top 25 percent of physicians are selected for review. Five claims for each of these physicians are randomly selected and examined for compliance with the program rules. This process is repeated quarterly, skipping physicians previously found to be in compliance. Incorrectly claimed bonus payments are supposed to be pursued with the physician's billing staff. All findings are then reported to HCFA within 75 days following the close of the reporting quarter.

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[6] The HCPCS is a collection of codes representing procedures, supplies, products and services provided to Medicare beneficiaries. The codes are divided into three levels: (I) CPT codes from the AMA; (II) primarily non-physician codes or physician codes not represented in the level I codes defined by HCFA and other entities; (III) codes developed by local Medicare carriers.

[7] This refers to the amount that is generally 80 percent of the allowed charge as defined by the Medicare Physician Fee Schedule.

Historical Performance of the Bonus Payment Program

Total bonus payments grew from $2 million in 1989 to $106 million in 1996, followed by a decline to $77 million in 1998. Table 1.1 summarizes trends in bonus payments for physician services in rural and urban HPSAs by calendar year. The large increase in bonus payments between 1990 and 1991 reflects not only increased usage of bonus payments, but also the legislative changes that increased the bonus payment from 5 percent to 10 percent of the amount paid by Medicare and expanded the program to urban HPSAs. After several years of growth, bonus payments declined between 1996 and 1998, with payments to urban physicians declining more rapidly than those to rural physicians.

Table 1.1
Health Professional Shortage Area Bonus Payments by Calendar Year

	Total Bonus Payment Amounts				
		Urban HPSAs		Rural HPSAs	
Calendar Year	All HPSAs	Amount	Pct of Total	Amount	Pct of Total
1989	$1,951,267	—	—	$1,951,268	100.0
1990	4,061,006	—	—	4,061,006	100.0
1991	31,600,448	$13,164,458	41.7	18,435,990	58.3
1992	63,198,974	33,543,986	53.1	29,654,966	46.9
1996	105,797,754	58,353,215	55.2	47,444,539	44.8
1997	98,164,161	52,623,749	53.6	45,540,412	46.4
1998	77,177,972	37,744,513	48.9	39,433,459	51.1

SOURCE: HCFA, unpublished quarterly report, 1993 (for years 1989-1992) and HCFA, unpublished quarterly report, 1999 (for years 1996-1998).

NOTE: Bonus payments for urban HPSAs did not begin until January 1, 1991.

Several federal entities have been scrutinizing the impacts of these payments on improving access (OIG, 1993; PPRC, 1994b; GAO 1999). The Office of the Inspector General conducted a survey in 1993 of physician attitudes regarding the bonus payments. Approximately one-quarter of all surveyed physicians described the bonus payments as extremely or very important to their decision about where to practice. Still, another third said the bonus payments were not at all important (OIG, 1993).

Another early study of the bonus payment program was performed by PPRC, reporting data from 1992. Their critique of the program was tentative due to the relative infancy of the program. In addition, the Medicare Physician Fee Schedule was being phased in at the same

time, making it difficult to distinguish effects of the bonus payments from other physician payment reforms. While long-term goals of retaining and recruiting physicians to rural regions could not be evaluated with this early program evaluation, intermediate goals were assessed (PPRC, 1994b).

In addition to documenting the general growth in the program (both in total payments and number of participating physicians), the PPRC report demonstrated that a large portion of the bonus payments were being targeted to primary care physicians and primary care services. Tables 1.2 and 1.3 present data from the PPRC report showing the distribution of bonus payments by specialty and by service type. In 1992, about half of all bonus payments went to primary care physicians whose practices were located in a HPSA, compared to one-quarter of bonus payments for physicians whose practices were located outside of a HPSA (Table 1.2).[8] Bonus payments in rural HPSAs were more likely to be paid to primary care physicians, constituting 63.6 percent of all rural HPSA bonus payments. Family practice physicians received the largest share of the payments. As shown in Table 1.3, only 34 percent of bonus payments were paid to physicians providing primary care services in all HPSAs combined. However, a much higher 41 percent of bonus payments in rural HPSAs was paid for primary care services compared to only 26 percent of the bonus payments in urban HPSAs.

Table 1.2
Bonus Payments for Health Professional Shortage Areas and Other Areas, by Specialty, 1992

Specialty	Total Non-HPSA	HPSA		
		Total	Urban	Rural
Primary Care Specialties	25.0	49.0	33.9	63.6
Internal Medicine	16.7	20.1	21.7	18.6
Family Practice	5.4	19.7	7.7	31.2
General Practice	3.0	9.2	4.5	13.7
Other Specialties	75.0	51.0	66.1	36.4

SOURCE: Physician Payment Review Commission analysis of first six months of 1992 Medicare claims, 5 percent beneficiary file. PPRC (1994b).

[8] It is not a requirement of the program that a physician's practice be physically located in a HPSA; the only requirement is that the service be provided in a HPSA.

Table 1.3
Bonus Payments for Health Professional Shortage Areas and Other Areas, by Service, 1992

	Total Non-HPSA	HPSA		
		Total	Urban	Rural
Primary Care Services	20	34	26	41
Other Services	80	66	74	59

SOURCE: Physician Payment Review Commission analysis of first six months of 1992 Medicare claims, 5 percent beneficiary file. PPRC (1994b).

The General Accounting Office published a report in 1999 that illustrated further growth in bonus payments to both rural and urban HPSAs. This growth, however, could not be directly linked to improved access to care. In 1996, $35 million in bonus payments was paid to specialists for specialty care provided in urban HPSAs where specialty care was not necessarily in short supply (GAO 1999). The GAO staff was unable to find any direct evidence that the bonus payments contributed to a physicians' decisions to stay in a particular community.

GAO staff analyzed the 1996 Medicare Current Beneficiary Survey and identified fewer than one million out of 29 million rural Medicare beneficiaries who had trouble obtaining health care. Only a fraction (estimated to be between 14,448 and 57,442) cited the inability to find a physician who would accept Medicare as the source of their trouble in getting access to needed services (GAO, 1999). These analyses did not focus on services provided in HPSAs however.

Similar findings were reported by Stearns et al. (2000). The authors examined not only self-reported satisfaction with and access to health care but went further to study rural/urban differences in preventive care received by a sample of Medicare beneficiaries. They found that rural beneficiaries received preventive care at rates similar to those in urban areas with the exception of preventive cancer screening for women and dental care.

SCOPE OF ANALYSIS OF THE MEDICARE INCENTIVE PAYMENT PROGRAM

The analyses presented in this report describe trends during the 1990s in the distribution and characteristics of both total and bonus payments made on behalf of rural Medicare beneficiaries in non-metropolitan counties and in counties with a HPSA designation. The analyses were designed to address the following basic questions:

- How have total payments and bonus payments for services provided to rural Medicare beneficiaries changed during the decade of the 1990s? What proportion of these payments is for beneficiaries residing in rural HPSAs versus those residing outside of HPSAs?

- How has the distribution of bonus payments across primary and specialty care physicians changed over time?

- What are the trends in the mix of primary care and other services that have a bonus payment attached?

In Section 2, the methods we used for the analyses are summarized, including data preparation, analysis plan, and measurement of key variables. Section 3 presents analytic results for trends in total and bonus payments through the 1990s. The policy implications and issues are discussed in Section 4.

Section 2.

METHODS AND DATA

ANALYSIS PLAN

As reported in the previous section, studies by the Physician Payment Review Commission and the General Accounting Office have documented trends in bonus payments made to HPSAs (PPRC, 1992, 1994; GAO, 1999). We extend the information from those reports by examining trends in bonus payments through the 1990s.

We used physician/supplier claims data for the 5 percent beneficiary sample to examine trends in total Medicare payments and bonus payments for physician services provided to non-metropolitan beneficiaries. Using claims data merged with geographic data from the Area Resource File (ARF), we identified services provided to beneficiaries located in rural counties, and classified them according to county location based on the Urban Influence Codes. Characteristics of these services were profiled for 1992, 1994, 1996, and 1998.

An additional set of analyses was performed using claims for both physician and NPP services to examine the extent to which NPPs provided services for rural Medicare beneficiaries. We analyzed Medicare spending on NPP services as a share of total spending on physician and NPS services by HPSA designation and non-metropolitan county categories.

All trends in utilization and spending on health care services were analyzed for Medicare beneficiaries residing in rural areas, *by beneficiary location* rather than physician practice location or site of care. This is key to understanding and interpreting our results because bonus payments are paid based on location of care (in a HPSA) rather than location of residence. We chose this analytic approach for reasons of both policy emphasis and data requirements. The policy focus of these analyses is on access to care for rural beneficiaries, which argues for this approach. Furthermore, the physician/supplier claims data only identify the county of beneficiary residence and zip code of provider location. Therefore, it was not possible to define county of service (and therefore rural or urban HPSA), and data requirements for establishing rural provider locations for 4 years of claims data would be substantial. Because the sample was

selected from claims for the 5-percent sample based on beneficiary residence, we were not able to analyze the number or characteristics of physicians claiming the bonus payments.

Given the well-documented migration of Medicare beneficiaries across geographic boundaries for health care services, this approach allowed us to capture basic Medicare payments and bonus payments for physician services that rural beneficiaries obtained in urban HPSAs. Conversely, claims for services provided in rural HPSAs for urban beneficiaries were lost to our analyses. We expect the loss of payments for the urban beneficiaries using rural services is equal to or smaller than the additional payments captured for rural beneficiaries using urban services.

The method we used to define rural locations was based on whether or not a beneficiary resided in a county that is part of a Metropolitan Statistical Area (MSA), as defined by the Bureau of the Census. All counties outside of an MSA were considered to be rural for purposes of this analysis. This definition is consistent with the geographic boundaries used in Medicare payment schedules for many provider services. However, county boundaries obscure a wide range of local characteristics because each county contains a mix of urban and more truly rural locations. Counties that are not in MSAs have fewer and smaller urbanized locations than MSA counties, but they are not uniformly rural in nature. Therefore, we refer to these counties as "non-metropolitan" counties, rather than "rural." We address this further below in our definition of non-metropolitan county categories, as well as in our analysis plan for the full study of which the current analysis is a component (Farley et al., 1999).

DATA SOURCES

The bonus payment analysis involved linking data from two sources:

1. An extract of the Area Resource File (ARF), which provided county-level information on Urban Influence Codes, provider supply, population, and other environmental variables;

2. Medicare Part B claims for physicians' services for the 5 percent sample of beneficiaries for 1992, 1994, 1996, 1998.

We linked physician claims to county-level measures (e.g., degree of rurality, HPSA designations, etc.) in the ARF extract file using the SSA state and county codes for beneficiary residence reported in the claims records.

Non-Metropolitan Counties

The availability of certain county-level data influenced the sets of counties we were able to include in each analysis. The Medicare program recognizes a larger set of counties (or other similar geographic jurisdictions) than those included in the ARF. The ARF contains only one record for the entire state of Alaska, whereas SSA county codes exist for a number of Alaskan boroughs. A discrepancy also existed for a set of independent cities in Virginia, which the state separates legally from historical county boundaries and are recognized by Medicare. We added new records for the Alaska boroughs and the Virginia independent cities to our analysis file, for which we obtained data on the 1990 population, UICs, Metropolitan Statistical Areas, and Medicare beneficiary counts.

We could not obtain data for the new Alaska or Virginia independent cities on HPSAs, MUAs, or other county characteristics that were on the ARF. For any analyses that used these variables, we worked with the smaller set of counties for which we had the full set of data. Alaska counties were dropped from these analyses, and the Virginia independent cities were re-combined with the counties from which they were extracted. This resulted in a lost of less than one percent of payments from the data used for the analyses.

DEFINING THE STUDY POPULATION

The population of interest for these analyses is Medicare beneficiaries residing in non-metropolitan counties. These beneficiaries may choose to use physician services in or out of HPSAs or in either rural or urban locations. Using physician/supplier claims for the 5 percent sample of Medicare beneficiaries, we extracted all claims for beneficiaries residing in non-metropolitan counties (i.e., not in an MSA). To correctly identify claims potentially eligible for bonus payments, we further limited our sample to claims for physician services as defined by provider specialty codes (described below), claims for which Medicare was the primary payer, and those claims that had not been denied.

In separate analyses, we considered the role that NPPs play in caring for beneficiaries in non-metropolitan counties. To accomplish this, we limited the sample as stated above but also included claims for NPP services as defined below.

We selected 1994 as a representative year to study how our selection criteria influenced the Medicare payment amounts and bonus payments included in our analyses. Although there are specific criteria a physician must meet to claim a bonus payment, a small portion of claims that were excluded in fact claimed a bonus payment, as indicated by the presence of a HCPCS modifier for a bonus payment. A total of slightly more than $706,000 in bonus payments was paid to providers where Medicare was not the primary payer (less than one percent of all bonus payments for that year). An additional $422,600 in bonus payments was paid for claims where the provider was not defined as a physician. As a result, approximately $1.1 million in bonus payments were excluded from our analyses, which represents 2.5 percent of total bonus payments estimated for 1994.

KEY ANALYTIC VARIABLES

We describe there the key analytic variables that we derived for our analyses. The report on the AAPCC analysis (Farley, et al., 2000) describes in detail the construction of analytic variables that are being used for all our analyses of Medicare special rural providers or payments, such as degree of rurality, geographic location. We summarize here some key characteristics and limitations of the data that are described in greater detail in the AAPCC report, and we also define other variables derived specifically for this analysis of bonus payments.

Non-Metropolitan Shortage Areas

As described above, physician services must be provided in a Health Professional Shortage Area (HPSA) to be eligible for bonus payments. Therefore, location in a Medically Underserved Area (MUA) has less policy significance for the bonus payment program, but it is important to examine trends in payments for services provided to Medicare beneficiaries residing in all shortage areas, to understand how this bonus payment policy may affect access in these other underserved areas. For each shortage area definition (HPSA and MUA), we identified the non-metropolitan counties with designation as either a whole-county shortage areas or a partial-county shortage area.

The federal government uses separate sets of criteria to determine HPSA and MUA designations. A HPSA designation refers to a geographic area or population having fewer than

one primary care physician per 3,500 people.[9] A medically underserved area (MUA) is designated based on primary care ratios as well as community income levels, the infant mortality rate, and other factors. HPSA designations are available in the ARF for years 1993, 1995, 1996, and 1997. We matched HPSA designations as closely as possible to the years of claims data. The 1993 HPSA designations were used with the 1992 and 1994 claims data, the 1996 HPSA designations were used with the 1996 claims data, and the 1997 HPSA designations were used with the 1998 claims data. MUA designations as of the year 1998 were used, which included all designations made since the inception of the MUAs (i.e., MUA designations were added over time but no areas had their designation removed).

Measures of Extent of Rurality

Grouping by Urban Influence Codes. Variables were constructed to characterize the degree of rurality for each county in the country, using categories that collapsed nine categories of the Urban Influence Code (UIC) to seven categories (Ghelfi and Parker, 1995). Based on the method outlined in our analysis plan (Farley et al., 1999), counties located in Metropolitan Statistical Areas (MSA) were designated as large or small metropolitan counties (UIC codes = 1, central and fringe counties in metropolitan areas of 1 million population or more, and UIC = 2, counties in metropolitan areas of fewer than 1 million population, respectively). Counties located outside of MSAs (non-metropolitan counties) were categorized into the following categories:

1. counties that are adjacent to an MSA and have a city of at least 10,000 population (UIC codes 3 and 5);
2. counties that are adjacent to an MSA and do not have a city of at least 10,000 population (UIC codes 4 and 6);
3. remote counties that are not adjacent to an MSA and have a city of at least 10,000 population (UIC code 7),
4. remote counties that are not adjacent to an MSA and have a town of 2,500 to 9,999 population (UIC codes 8), and

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[9] Additional criteria are applied including a national area for delivery of services, high need for primary care services, or insufficient capacity of current providers.

5. remote counties that are not adjacent to an MSA and do not have a town of at least 2,500 population (UIC codes 9).

Urban Influence Codes have not been updated since their publication in 1993. Consequently the stratification of counties using these codes may not reflect the actual rural designation that applied to a county in later years of the study period.

Frontier Counties. An important descriptive characteristic of rural services is location in a frontier county. Counties were defined as frontier if they had a population density of 6 persons per square mile or less based on 1990 Census population counts (Farley, et al., 2000). Counties designated as frontier are largely concentrated in a group of Western states. We included this geographic demarcation in our definition of a frontier county by excluding some counties in Minnesota, the South, and the Northeast that have low population densities that otherwise would qualify them as frontier.

Physicians Eligible for Bonus Payments

The legislation authorizes bonus payments only for physician services, which include services provided by medical doctors, doctors of osteopathy, dentists, podiatrists, licensed chiropractors, and optometrists. In Table 2.1, we list all of the provider specialty codes that we used to identify claims as being for physician services and, therefore, potentially eligible for a bonus payment under the legislation (if provided in a HPSA). Only claims with one of these specialty codes were included in our bonus payment analyses.

Primary Care Physicians and Other Specialties

One of the aims of this report is to replicate and extend analyses of the bonus payment program conducted by other studies, both to validate our analyses and to understand how those measures of program performance have changed over time. Both the PPRC (1994b) and GAO (1999) examined the proportion of bonus payments distributed to physicians by specialty. In their analyses, they grouped physicians by whether their specialty was considered a primary care specialty or not. They included general practice (HCFA specialty code '01'), family practice ('08'), and internal medicine ('11') in the category of primary care physician specialties. All other specialties were grouped together as "other" specialties.

We examined trends in how many bonus payments and total dollars were distributed to physicians by this primary/other specialty care designation. We also broke out these categories to see how the proportion of payments changed over time for each type of primary care specialty and for general surgeons, cardiologists, and gynecologists separately from other specialties.

Table 2.1
Medicare Specialty Codes Used to Identify Physician Claims Eligible for the Medicare Bonus Payments

01 General Practice	36 Nuclear Medicine
02 General Surgery	37 Pediatric Medicine
03 Allergy/Immunology	38 Geriatric Medicine
04 Otolaryngology	39 Nephrology
05 Anesthesiology	40 Hand Surgery
06 Cardiology	44 Infectious Disease
07 Dermatology	46 Endocrinology
08 Family Practice	48 Podiatry
10 Gastroenterology	66 Rheumatology
11 Internal Medicine	70 Clinic or Other Group Practice
12 Osteopathic Manipulative Therapy	76 Peripheral Vascular Disease
13 Neurology	77 Vascular Surgery
14 Neurosurgery	78 Cardiac Surgery
16 Obstetrics/Gynecology	79 Addiction Medicine
18 Ophthalmology	81 Critical Care (Intensivists)
19 Oral Surgery (dentists only)	82 Hematology
20 Orthopedic Surgery	83 Hematology/Oncology
22 Pathology	84 Preventive Medicine
24 Plastic/Reconstructive Surgery	85 Maxillofacial Surgery
25 Physical Medicine/Rehabilitation	86 Neuropsychiatry
26 Psychiatry	90 Medical Oncology
28 Colorectal Surgery	91 Surgical Oncology
29 Pulmonary Diseases	92 Radiation Oncology
30 Diagnostic Radiology	93 Emergency Medicine
33 Thoracic Surgery	94 Interventional Radiology
34 Urology	98 Oncology Gynecology
35 Chiropractic	99 Unknown Physician Specialty

SOURCE: Documentation for the Medicare Physician Supplier File.

Primary Care Services

To examine the distributions of bonus payments according to the types of services being provided (as opposed to the type of provider), we coded each claim line item as a primary care service or other type of service. We identified primary care services using the definition of primary care services outlined in OBRA-87. The legislation defines primary care services as "...physicians' services which constitute office medical services, emergency department services,

home medical services, skilled nursing, intermediate care, and long-term care medical services, or nursing home, boarding home, domiciliary, or custodial care medical services." These services are categorized as Evaluation and Management services (AMA, 1997). Table 2.2 lists the services considered primary care and their corresponding HCPCS codes. These codes are found in the Level I HCPCS and those corresponding to the listed service types were identified in the claims data and grouped together to create a primary care services variable. All claims with other HCPCS codes were categorized as "other" services.

Table 2.2
Codes Used to Define Primary Care Services for the Bonus Payment Analysis

Service Description	HCPCS Codes
Office or Other Outpatient Visit; New Patient	99201-99205
Office or Other Outpatient Visit; Established Patient	99211-99215
Emergency Department Visit	99281-99288
Comprehensive Nursing Facility Assessments	99301-99303
Subsequent Nursing Facility Care	99311-99323
Domiciliary, Rest Home (e.g., Boarding Home), or Custodial Care Services; New Patient	99321-99323
Domiciliary, Rest Home (e.g., Boarding Home), or Custodial Care Services; Established Patient	99331-99333
Home Services; New Patient	99341-99343
Home Services; Established Patient	99351-99353

SOURCE: Physicians' Current Procedure Terminology, American Medical Association (1997).

Non-Physician Practitioners

Although non-physician practitioners are not eligible for the bonus payment program, they are important providers of primary care services in underserved regions of the country. For these analyses, we used Medicare specialty codes to define non-physician practitioners to include: physician assistants (specialty code '97'), nurse practitioners ('50'), certified nurse midwives ('42'), certified clinical nurse specialists ('89'), and certified nurse anesthetists ('43').

Medicare Payments

Basic Payments: Basic Medicare payments were defined as the amounts paid by Medicare, as reported in the line item payment amounts in the claims (rather than the total allowed charges that include the coinsurance amount for which beneficiaries were liable). Line

item payments were summed across all physician claims for the 5 percent sample of beneficiaries and then multiplied by 20 to approximate the basic Medicare payments made to physicians for services provided to all rural beneficiaries. Because Medicare carriers are required to process bonus payments separately from claims, the physician claims do not include the bonus payment amounts.

Bonus Payments: Bonus payments are calculated as 10 percent of what Medicare paid for eligible physician services. To be eligible for the bonus payment, a physician must include a HCPCS code modifier on the claim form to indicate the service was provided in a rural or urban HPSA (modifiers 'QB' and 'QU').[10] Therefore, to calculate the total bonus payments made in each year, we first identified all physician claims with the appropriate modifier. The bonus payment for each claim with a modifier was calculated by multiplying the line item payment (see above) by 0.1 to get an amount equivalent to 10 percent of that claim payment. These bonus payments were then summed together for the 5 percent sample of claims. This sum was then multiplied by 20 to estimate the total bonus payments made to all physicians providing services to beneficiaries residing in non-metropolitan counties.

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[10] Beneficiaries in non-metropolitan counties obtained some services in urban HPSAs. As a result, somewhat less than 1% of the claims with a bonus payment modifier were coded for services provided in urban HPSAs. These payments are included in the total amounts examined in the analyses.

Section 3.

UTILIZATION AND SPENDING FOR PHYSICIAN SERVICES

The perspective taken for the analyses presented in this section is that of the Medicare beneficiary. As described in Section 2, the sample was selected based on the state and county of residence for beneficiaries in non-metropolitan counties. This population-based approach is intended to gain a better understanding of the extent to which non-metropolitan beneficiaries utilize physician services, particularly in underserved areas, from whom they seek services (primary care physicians versus other specialty physicians), what kinds of services they receive (primary care services versus other services), and how utilization and spending vary across beneficiaries living in counties with and without HPSA designations.

DISTRIBUTION OF TOTAL AND BONUS PAYMENTS

We begin by reporting basic Medicare spending for physician services and for bonus payment amounts, by county category as defined by UICs. As shown in Table 3.1, Medicare spent more than $5 billion on physician services for non-metropolitan beneficiaries in 1992, which increased to $7.4 billion by 1998.[11] While total payments for physician services increased during the 1990s, the distribution of these payments across county categories remained virtually the same over time. Physicians serving beneficiaries residing in counties adjacent to an MSA received more than half of the total Medicare payments in each year studied.

Bonus payments to physicians increased through 1996, followed by a decline by 1998. In 1992, $25 million were paid to physicians through the bonus payment program, and amounts reached $42 million in 1996. Bonus payments declined by 13 percent over the next two years to $36 million in payments in 1998.

Similar to Medicare spending for physician services, the distribution of bonus payments across county categories varied little over time. The majority of bonus payments were made for services provided to beneficiaries residing in counties without a city of 10,000 or more

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[11] These dollar amounts have not been adjusted for inflation.

population, including those in counties adjacent to an MSA and those that are not. Physicians providing services to beneficiaries residing in counties adjacent to an MSA but without a large city received over one-third of all bonus payments made in each year studied. This pattern reflects the fact that more than one-third of the whole-county HPSAs in non-metropolitan counties are located in counties adjacent to an MSA without a large city.

Table 3.1
Distribution of Basic Medicare Payments to Physicians and Bonus Payments for Services to Non-Metropolitan Beneficiaries, by County Category, 1992-1998 ($1,000)

	1992	1994	1996	1998
Total Basic Payments ($1,000):	$5,025,344	$5,926,700	$6,739,377	$7,389,105
Percentage by county category:				
Adjacent, city 10,000+	26.4%	26.3%	26.1%	26.0%
Adjacent, no city 10,000+	30.2	30.3	30.4	30.2
Remote, city 10,000+	17.7	17.7	17.7	17.8
Remote, town 2,500-10,000	19.1	18.8	18.9	19.0
Remote, no town	6.7	6.8	6.9	6.9
Frontier counties	3.7	3.8	3.8	3.7
Total Bonus Payments ($1,000):	$25,401	$38,532	$42,019	$36,420
Percentage by county category:				
Adjacent, city 10,000+	18.3%	19.0%	17.0%	16.0%
Adjacent, no city 10,000+	36.1	35.1	36.4	37.6
Remote, city 10,000+	11.2	12.4	12.9	11.5
Remote, town 2,500-10,000	22.4	23.2	23.3	24.6
Remote, no town	11.9	10.3	10.4	10.3
Frontier counties	5.1	4.6	4.5	5.1
Bonus Payments as a Percentage of Basic Physician Payments				
All non-metropolitan counties	0.5%	0.7%	0.6%	0.5%
By county category:				
Adjacent, city 10,000+	0.4	0.5	0.4	0.3
Adjacent, no city 10,000+	0.6	0.8	0.7	0.6
Remote, city 10,000+	0.3	0.5	0.5	0.3
Remote, town 2,500-10,000	0.6	0.8	0.8	0.6
Remote, no town	0.9	1.0	0.9	0.7
Frontier counties	0.7	0.8	0.7	0.7

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

Looking at bonus payments as a percentage of Medicare payments, we find that, overall, bonus payments grew from 0.5 percent to 0.7 percent of Medicare payments from 1992, and then declined to 0.5 percent of payments by 1998. The highest levels of bonus payments, expressed as percentages of service payments, were found for services to beneficiaries living in the more remote counties, including frontier counties. The lowest percentages of bonus payments were for beneficiaries in counties that had a city of 10,000 or more population.

The total bonus payment amounts reported in Table 3.1 are 10 to 13 percent lower than those reported for rural HPSAs in Table 1.1. The payments presented in Table 1.1 represent all bonus payments made to physicians, by rural or urban HPSA location, while the bonus payments presented in Table 3.1 are only those for physician services provided to beneficiaries residing in non-metropolitan counties. These amounts do not include bonus payments for services provided to urban county residents who received services in rural HPSAs. On the other hand, they do include bonus payments for services provided to non-metropolitan county residents who received care in urban HPSAs (Medicare paid almost $3 million in bonus payments to physicians for services provided to non-metropolitan beneficiaries in an urban HPSA).

From Table 3.2, we find that the distribution of basic Medicare payments for physician services by HPSA designation did not change very much over time. Between 1994 and 1996, the percentage of total Medicare spending on physician services for beneficiaries residing in partial county HPSAs increased by 6.6 percent while the overall percentage of spending for care provided to beneficiaries in non-HPSA counties declined. This was a result of the addition of new partial-county HPSA designations in 1996 in counties that did not have them in 1994. Medicare spending for services to beneficiaries in whole county HPSAs did not change during this time frame.

As expected, the largest share of bonus payments was made to physicians for services provided to beneficiaries residing in a whole-county HPSA. The share of bonus payments going for beneficiaries in whole-county HPSAs increased by 4.2 percentage points, and the share for those in partial-county HPSAs increased by 2.0 percentage points, while bonus payments for beneficiaries in non-HPSA counties declined.

Table 3.2
Distribution of Basic Medicare Payments to Physicians and Bonus Payments for Services to Non-Metropolitan Beneficiaries, by Health Professional Shortage Area, 1992-1998 ($1,000)

	1992	1994	1996	1998
Total Basic Payments ($1,000):	$5,025,344	$5,926,700	$6,739,377	$7,389,105
Percentage by HPSA designation:				
Whole county HPSA	19.4%	19.6%	20.1%	18.1%
Partial county HPSA	37.8	38.0	44.6	44.4
Not HPSA designation	42.9	42.5	35.3	37.5
Total Bonus Payments ($1,000:	$25,401	$38,532	$42,019	$36,420
Percentage by HPSA designation:				
Whole county HPSA	56.7%	58.5%	58.0%	60.9%
Partial county HPSA	28.2	29.6	32.9	30.3
Not HPSA designation	15.0	11.9	9.1	8.8
Bonus Payments as a Percentage of Basic Physician Payments				
All non-metropolitan counties	0.5%	0.7%	0.6%	0.5%
By HPSA designation:				
Whole county HPSA	1.5	2.0	1.8	1.7
Partial county HPSA	0.4	0.5	0.5	0.3
Not HPSA designation	0.2	0.2	0.2	0.1

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

Table 3.3 summarizes the distribution of basic Medicare payments and bonus payments to physicians for services provided to beneficiaries in non-metropolitan areas by Medically Underserved Area designations. MUA designation is granted to counties or regions based on primary care physician supplies as well as community income levels and other factors. Many counties qualified as both HPSAs and MUAs. In each year, between 71 and 81 percent of all whole-county HPSAs were also designated as whole-county MUAs. As such, it is not surprising that counties designated as whole-county MUAs received the largest proportion of bonus payments.

Table 3.3
Distribution of Basic Medicare Payments to Physicians and Bonus Payments for Services to Non-Metropolitan Beneficiaries, by Medically Underserved Area, 1992-1998 ($1,000)

	1992	1994	1996	1998
Total Basic Payments ($1,000):	$5,025,344	$5,926,700	$6,739,377	$7,389,105
By MUA Designation:				
Whole county MUA	43.8%	43.7%	44.1%	44.2%
Partial county MUA	35.5	35.6	35.1	34.8
Not MUA	20.7	20.7	20.9	21.0
Total Bonus Payments ($1,000):	$25,401	$38,532	$42,019	$36,420
By MUA Designation:				
Whole county MUA	69.2%	69.4%	68.2%	69.2%
Partial county MUA	22.4	22.3	22.7	20.7
Not MUA	8.5	8.3	9.1	10.1

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

PER CAPITA SPENDING FOR NON-METROPOLITAN BENEFICIARIES

In Table 3.4, we report estimated Medicare per capita spending on physician services and bonus payments for beneficiaries residing in non-metropolitan counties. Overall, Medicare per capita spending increased 36 percent between 1992 and 1998, rising from an estimated $574 per beneficiary to $783 per beneficiary. Bonus payment spending increased from an estimated $3 per beneficiary in 1992 to $5 per beneficiary in 1996 but declined in 1998 to $4 per beneficiary.

For each year, we find lower Medicare per capita spending on physician services for beneficiaries residing in the more remote non-metropolitan counties, with the lowest rates of per capita spending in frontier counties. The difference in spending on beneficiaries in counties with a large city adjacent to an urban county and beneficiaries in frontier counties is an estimated $114 (19 percent) per beneficiary for 1992 (=$606-$492) and $150 (18 percent) per beneficiary in 1998.

In contrast to basic Medicare per capita spending patterns, the highest average per capita bonus payment in each year was for beneficiaries in remote counties with no large town. The smallest per capita bonus payments were for beneficiaries in counties with a city of 10,000 or more, including counties that are adjacent to an MSA and those that are not.

Table 3.4
Distribution of Medicare Total per Capita Spending and Bonus Payments for Physician Services for Beneficiaries in Non-Metropolitan Counties, by County Category, 1992-1998

	1992	1994	1996	1998
Basic Payments:				
All Beneficiaries	$574	$656	$726	$783
By non-metro county category:				
Adjacent, city 10,000+	606	690	758	815
Adjacent, no city 10,000+	584	667	738.	788
Remote, city 10,000+	570	652	720	784
Remote, town 2,500-10,000	547	620	691	753
Remote, no town	511	601	671	727
Frontier counties	492	573	621	665
Bonus Payments:				
All Beneficiaries	$3	$4	$5	$4
By non-metro county category:				
Adjacent, city 10,000+	2	3	3	3
Adjacent, no city 10,000+	4	5	6	5
Remote, city 10,000+	2	3	3	3
Remote, town 2,500-10,000	3	5	5	5
Remote, no town	5	6	7	6
Frontier counties	4	5	5	5

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Per capita payments are measured as total or bonus payments divided by the number of Medicare beneficiaries residing in each category of non-metropolitan county.

In Table 3.5, we present per capita Medicare basic spending and bonus payments by HPSA county designation. Medicare spending on beneficiaries residing in counties with no HPSA designation received the highest per capita spending for physician services, and per capita spending for beneficiaries in either whole- or partial-county HPSAs was moderately lower.

Per capita bonus payments follow a pattern similar to that for aggregate bonus payment amounts (shown in Table 3.2). Just as the highest proportion of bonus dollars was spent on beneficiaries residing in HPSA counties, per capita spending is also highest in these counties, especially the whole-county HPSAs. Although per capita bonus payment spending declined between 1996 and 1998, the difference in spending between beneficiaries in whole-county HPSAs and non-HPSA counties increased over time from $8 (=$9-$1) in 1992 to $12 in 1998.

Table 3.5
Distribution of Medicare Total per Capita Spending and Bonus Payments for Physician Services for Beneficiaries in by Health Professional Shortage Area, 1992-1998

	1992	1994	1996	1998
Basic Payments:				
All Beneficiaries	$574	$656	$726	$783
By HPSA Designation:				
Whole county HPSA	572	660	721	779
Partial county HPSA	564	646	724	774
Not HPSA Designation	585	664	732	796
Bonus Payments:				
All non-metropolitan beneficiaries	$3	$4	$5	$4
By HPSA designation:				
Whole county HPSA	9	13	13	13
Partial county HPSA	2	3	3	3
Not HPSA Designation	1	1	1	1

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Per capita payments are measured as total or bonus payments divided by the number of Medicare beneficiaries residing in each category of non-metropolitan county.

Trends by HHS Regions in per capita spending for basic Medicare payments and bonus payments for physician services, shown in Table 3.6, document steady increases in per capita payments from 1992 to 1998, as well as wide regional variations in spending for these services within each year. In 1992, for example, the Dallas region had the highest average level of basic Medicare spending was in the Dallas region ($618 per beneficiary), whereas the lowest average level was in the Denver region ($462 per beneficiary). By 1998, the Atlanta region had the highest level of $853 per beneficiary (the Dallas region was second highest) while the Seattle region continued had the lowest level of $622 per beneficiary.

By contrast, there do not appear to be consistent trends in per capita spending on physician bonus payments by HHS region. The highest bonus payment rates in 1992 were $4 per beneficiary for the New York, Atlanta, Dallas, and San Francisco regions. Bonus payment trends for individual regions fluctuated during the intervening years, ultimately resulting in a wider range in per capita payments. In 1998, Medicare paid an average of $6 per beneficiary in bonus

payments for non-metropolitan beneficiaries in the Atlanta, Dallas, and San Francisco regions, while spending for all other regions except New York was at $3 per beneficiary or less.

Table 3.6
Distribution of Medicare Total per Capita Spending and Bonus Payments for Physician Services for Beneficiaries in Non-Metropolitan Counties, by HHS Region, 1992-1998

	1992	1994	1996	1998
Basic Payments:				
All Beneficiaries	$574	$656	$726	$783
By HCFA Region:				
1. Boston	549	639	702	740
2. New York	582	685	772	783
3. Philadelphia	599	688	719	754
4. Atlanta	604	692	795	853
5. Chicago	541	632	707	771
6. Dallas	618	693	752	826
7. Kansas City	550	621	691	769
8. Denver	462	526	584	640
9. San Francisco	607	687	704	752
10. Seattle	532	578	606	622
Bonus Payments:				
All Beneficiaries	$3	$4	$5	$4
By HCFA Region:				
1. Boston	<1	1	1	1
2. New York	4	6	8	4
3. Philadelphia	2	3	4	3
4. Atlanta	4	6	7	6
5. Chicago	2	4	3	3
6. Dallas	4	7	6	6
7. Kansas City	2	3	3	3
8. Denver	3	3	3	3
9. San Francisco	4	4	5	6
10. Seattle	1	1	1	1

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Per capita payments are measured as total or bonus payments divided by the number of Medicare beneficiaries residing in each category of non-metropolitan county.

BONUS PAYMENTS ATTRIBUTABLE TO PRIMARY CARE

The following set of tables examines the extent to which bonus payments are being made for services provided by primary care physicians or for primary care services. Because access to primary care is a priority for underserved areas, we focus on how the bonus payment program

may enhance access to such services. The measures used for this analysis were the percentage of total bonus payments that are spent on (1) primary care physicians as a compared to other physician specialties and (2) on primary care services versus other services. These tables extend some of the analyses performed by the PPRC on the early progress of the bonus payment program, the results of which were published in its report to Congress. (Refer to Section 1 for a summary of these results.) A word of caution: we cannot directly compare our results to the PPRC numbers primarily because our analyses were limited to bonus payments for services to beneficiaries residing in non-metropolitan counties rather than the entire bonus payment program. Therefore, we cannot account for all bonus payments because our analyses do not include payments for beneficiaries in metropolitan counties.

Bonus Payments for Primary Care Physicians

As described in Section 2, we operationalized the definition of physician services as services by providers with the Medicare specialty codes listed in Table 2.1, and primary care physicians were defined as those in general practice, family practice, internal medicine. As shown in Table 3.7, slightly more than half of all Medicare bonus payments for services to beneficiaries in non-metropolitan counties were made to primary care physicians, and the percentages paid to these physicians declined gradually from 1992 through 1998. This decline was due to reductions over time in bonus payments to both general practice and family practice physicians, while payments to internal medicine physicians increased slightly.

Table 3.7
Distribution of Medicare Bonus Payments for Beneficiaries Residing in Non-Metropolitan Counties, by Physician Specialty, 1992-1998

	1992	1994	1996	1998
Total Bonus Payments	$25,401,126	$38,531,638	$42,019,470	$36,420,069
Percentage by specialty:				
Primary care	55.9%	52.4%	50.3%	49.7%
General Practice	11.8	9.9	8.0	7.7
Family Practice	27.6	24.5	22.7	23.3
Internal Medicine	16.6	17.9	19.7	19.3
Other specialties	44.1	47.6	49.7	50.3
General Surgery	10.4	10.3	9.8	9.0
Cardiology	2.1	3.3	3.1	3.1
Gynecology	<1.0	<1.0	<1.0	<1.0
All Other	31.6	34.1	36.8	37.6

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

Table 3.8 summarizes the distribution of bonus payments by physician specialty and HPSA county designation for the two years of 1994 and 1998. In both years, primary care physicians providing care to beneficiaries in whole-county HPSAs received the largest share of bonus payment dollars, although their share declined slightly during the four-year period. The percentage of bonus payments to primary care physicians serving beneficiaries in partial-county HPSAs declined more sharply (5 percentage points) between 1994 and 1998, whereas the payment shares increased for those serving beneficiaries in non-HPSA counties.

Table 3.8
Distribution of Medicare Bonus Payments for Beneficiaries in Non-Metropolitan Health Professional Shortage Areas, by Physician Specialty, 1994 and 1998

	Whole County HPSA	Partial County HPSA	Not a HPSA
1994			
Primary care	54.8%	49.7%	46.7%
General practice	10.8	8.7	8.5
Family practice	25.9	22.8	22.2
Internal medicine	18.1	18.2	16.0
Other Specialties	45.2	50.3	53.3
General surgery	10.9	9.2	10.4
Cardiology	3.1	3.6	3.1
Gynecology	0.3	0.4	0.3
All other	30.9	37.1	39.5
1998			
Primary care	52.9%	44.9%	51.0%
General practice	8.1	7.0	8.3
Family practice	24.5	20.2	25.9
Internal medicine	20.4	17.8	16.7
Other Specialties	47.1	55.1	49.0
General surgery	9.5	8.1	7.9
Cardiology	3.2	3.2	1.9
Gynecology	0.3	0.5	0.5
All Other	34.1	43.3	38.8

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

Bonus Payments for Primary Care Services

The percentage of Medicare bonus payments spent on primary care services for non-metropolitan beneficiaries rose steadily during the 1990s, as summarized in Table 3.9. Between 1992 and 1998, bonus payments paid for primary care services increased from 29.7 percent to 37.0 percent of total bonus payments for services to non-metropolitan beneficiaries. Despite this trend, the majority of bonus payments (70.3 percent in 1992 and 63.0 percent in 1992) went to other services that were not included in the definition of primary care services.

Similar trends of increased bonus payments for primary care services occurred for whole-county HPSAs, partial-county HPSAs, and non-HPSA counties, as also shown in Table 3.9. Between 1996 and 1998, the largest increase in the share of bonus payments occurred for

services provided to beneficiaries residing in a non-HPSA county (a spending increase of 7.9 percentage points).

Table 3.9
Distribution of Medicare Bonus Payments for Beneficiaries in Non-Metropolitan Health Professional Shortage Areas, by Type of Service, 1992-1998

	All Non-Metro Counties	Whole County HPSA	Partial County HPSA	Not a HPSA
1992				
Primary Care Services	29.7%	29.5%	31.2%	27.6%
Other Services	70.3	70.5	68.8	72.4
1994				
Primary Care Services	30.8	31.4	30.2	29.4
Other Services	69.2	68.6	69.8	70.6
1996				
Primary Care Services	31.9	32.8	30.5	31.0
Other Services	68.1	67.2	69.5	69.0
1998				
Primary Care Services	37.0	37.2	36.0	38.9
Other Services	63.0	62.8	64.0	61.1

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Primary care services are defined by OBRA-87 as "physicians' services" by HCPCS codes: office medical services, home medical services, emergency room services, skilled nursing, intermediate care, and long-term care medical services (nursing home and custodial care). Services defined as such to be compatible with definitions used in PPRC report (1994b).

In Tables 3.10 and 3.11, we examine the extent to which bonus payments for primary care services for beneficiaries residing in non-metropolitan counties were paid to primary care physicians. An estimated 79.9 percent of bonus payments paid for primary care services were paid to primary care physicians in 1992, declining to 70.7 percent in 1998. Within the primary care physician category, most of the decline in shares of bonus payments for primary care services was experienced by general practice physicians, although family practice shares also decreased at a slower rate. Payment shares increased for internal medicine physicians. With this decline in payment shares for primary care physicians during the 1990s, the role of specialty physicians in providing primary care services increased, as reflected in payment shares that rose

from 20.1 percent of all primary care bonus payments in 1992 to 29.3 percent of the total in 1998.

Table 3.10
Distribution of Medicare Bonus Payments Made for Primary Care Services Provided to Non-Metropolitan Beneficiaries, by Physician Specialty, 1992-1998

	1992	1994	1996	1998
Bonus Payments for Primary Care Services	$7,523,404	$11,876,060	$13,401,411	$13,466,950
Primary care	79.9%	76.6%	73.9%	70.7%
General Practice	20.0	17.5	14.6	12.8
Family Practice	40.9	37.9	36.1	35.1
Internal Medicine	19.0	21.2	23.3	22.8
Other Specialties	20.1	23.4%	26.1	29.3

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Primary care services are defined by OBRA-87 as "physicians' services" by HCPCS codes: office medical services, home medical services, emergency room services, skilled nursing, intermediate care, and long-term care medical services (nursing home and custodial care). Services defined as such to be compatible with definitions used in PPRC report (1994b).

Primary care physicians providing services to beneficiaries in whole-county HPSAs received a slightly larger share of bonus payments for primary care services than those serving beneficiaries in other county designations (Table 3.11). Between 1994 and 1998, there was an increase of almost 9 percentage points in the share of bonus payments for primary care services provided by specialists to beneficiaries in partial-county HPSAs.

Table 3.11
Percent of Medicare Bonus Payments Made for Primary Care Services in Health Professional Shortage Areas and Other Areas, by Physician Specialty, 1994 & 1998

	Whole County HPSA	Partial County HPSA	Not a HPSA
1994			
Total Bonus Payments for Primary Care Services	$7,052,834	$3,432,223	$1,339,116
Primary Care Specialists	77.4%	76.1%	74.0%
General Practice	18.0	16.3	17.9
Family Practice	38.6	37.0	37.0
Internal Medicine	20.9	22.7	19.1
Other Specialties	22.6	23.9	26.0
1998			
Total Bonus Payments for Primary Care Services	$8,171,592	$3,931,189	$1,238,472
Primary Care Specialists	72.1%	67.2%	72.2%
General Practice	13.3	11.7	13.2
Family Practice	35.2	33.2	40.1
Internal Medicine	23.5	22.4	18.9
Other Specialties	27.9	32.8	27.8

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Primary care services are defined by OBRA-87 as "physicians' services" by HCPCS codes: office medical services, home medical services, emergency room services, skilled nursing, intermediate care, and long-term care medical services (nursing home and custodial care). Services defined as such to be compatible with definitions used in PPRC report (1994b).

These findings regarding primary care services by specialists are consistent with the 1994 PPRC report. The authors of that report suggested that two distinct factors may contribute to these results: (1) the broad definition of primary care services that encompasses some services provided by specialty physicians, and (2) an inadequate supply of primary care physicians in underserved areas that results in specialists providing some primary care services they would not provide in more urban areas. Anecdotal information suggests that the increase in the share of primary care services provided by specialists may also reflect insufficient specialty business and that specialists are providing primary care services to build up their practices. According to one study, however, OB-gynecologists and general surgeons were the only specialists in rural areas found to provide services outside of their specialty areas, compared to their urban counterparts

(Baldwin et al., 1998). Thus, we have more to learn about the services provided by rural specialty physicians.

Additionally, the definition of the primary care physician excludes certain specialties that do perform primary care services as a routine part of their practice (i.e., gynecologists – see below). Of note, in Table 3.11, a larger share of primary care services for partial-county HPSA residents was provided by specialists. During this same time period (1994 to 1998), the number of counties with a partial-county HPSA designation increased slightly (from 1083 counties to 1197 counties), reflecting a growing number of areas that meet the criteria for a health professional shortage area. In essence, this trend may reflect the growing role that specialists are playing in providing primary care services due to an under-supply of primary care physicians.

TRENDS IN BASIC PAYMENTS FOR PRIMARY CARE

The previous tables report the proportion of bonus payments made to physicians by specialty and bonus payments made for primary care versus other services. By definition, those tables reflect only the services for which a bonus payment was claimed. However, physicians may have provided primary care services in underserved areas without claiming a bonus payment. Therefore, we now examine basic Medicare payments to physicians for primary care services to assess the percentage of these payments that were paid to primary care and specialty physicians, as summarized in Table 3.12. We include gynecology and urology as other specialty physicians that are known to provide primary care services for Medicare beneficiaries.

Payments for primary care services as a share of aggregate basic Medicare payments for physician services increased by 4.6 percentage points between 1992 and 1994. This trend was evident across all specialties, indicating that rural beneficiaries received relatively more primary care services over time regardless of the specialty of the provider. Primary care services comprised a much larger share of Medicare payments to primary care physicians, compared with payments to specialty physicians, and this share increased from 34 percent of Medicare payments in 1992 to about 40 percent in 1998. Although not included as primary care physicians, an

estimated one-quarter of Medicare payments to gynecologists were for primary care services. However, this was not reflected in the claims by gynecologists for bonus payments.[12]

Table 3.12
Medicare Payments for Primary Care Services as a Share of Total Physician Payments for Services to Non-Metropolitan Beneficiaries, by Physician Specialty, 1992-1998 ($1,000)

	1992	1994	1996	1998
Primary Care Payments ($1,000)	$703,514	$954,199	$1,149,814	$1,375,631
% of Total Basic Payments	14.0%	16.1%	17.1%	18.6%
Primary Care	34.0	37.1	38.4	40.1
General Practice	48.8	51.4	52.3	53.2
Family Practice	40.5	42.8	44.5	47.5
Internal Medicine	25.1	28.9	30.8	32.4
Other Specialties	7.2	9.1	10.3	11.7
General Surgery	7.8	8.3	8.4	9.4
Cardiology	6.1	7.1	8.6	9.3
Gynecology	20.5	24.5	25.6	28.2
Urology	8.9	9.9	9.5	10.4
All Other	7.0	9.3	10.6	12.2

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Primary care services are defined by OBRA-87 as "physicians' services" by the HCFA HCPCS codes: office medical services, home medical services, emergency room services, skilled nursing, intermediate care, and long-term care medical services (nursing home and custodial care). Services were defined as such to be compatible with definitions used in the PPRC report (1994b). Proportion of payments for primary care services was calculated as the total line payments made for primary care services by specialty divided by total line payments for all services by specialty.

We also analyzed bonus payments for primary care services, by physician specialty, for each of the categories of HPSA designation (whole-county HPSA, partial-county HPSA, and non-HPSA counties). We found that trends in the percentage of bonus payments for primary care services paid to primary care physicians by HPSA designation did not differ significantly from the overall trends reported in Table 3.12.

[12] Gynecologists claimed less than one percent of all bonus payments overall and for primary care services specifically in each year studied (data not shown).

PAYMENTS TO NON-PHYSICIAN PRACTITIONERS

In this final analysis, we explored the role of non-physician providers (NPPs) in providing services to Medicare beneficiaries in non-metropolitan counties, as reflected in Medicare payments. As described in Section 2, NPPs were defined for this analysis to include physician assistants, nurse practitioners, certified nurse midwives, certified clinical nurse specialists, and certified nurse anesthetists in this group. In Table 3.13, estimates are presented of the percentage of Medicare spending for services that NPPs billed directly as a fraction of all dollars spent on NPP and physicians' services (as previously defined), overall and by county category.

Table 3.13
Medicare Payments to Non-Physician Practitioners for Services to Beneficiaries in Non-Metropolitan Counties, by County Category and HPSA Designation, 1992-1998

	1992	1994	1996	1998
Medicare Payments to NPPs	$80,481,296	$86,671,169	$101,077,418	$133,583,606
Percentage of the sum of Medicare payments to physicians or NPPS:				
All non-metropolitan counties	1.6%	1.4%	1.5%	1.8%
By county category:				
Adjacent, city 10,000+	1.3	1.2	1.2	1.5
Adjacent, no city 10,000+	1.5	1.4	1.4	1.7
Remote, city 10,000+	1.6	1.5	1.5	1.8
Remote, town 2,500-10,000	1.9	1.7	1.8	2.2
Remote, no town	2.0	1.9	1.9	2.2
Frontier counties	2.0	1.9	2.0	2.4
By HPSA designation:				
Whole county HPSA	1.8	1.6	1.5	1.8
Partial county HPSA	1.5	1.4	1.4	1.7
Not HPSA designation	1.6	1.4	1.5	1.8

SOURCE: Physician/supplier claims for the 5% sample of beneficiaries. Total payment amounts are estimated by multiplying the payment amounts for the 5% sample by 20.

NOTE: Non-Physician Practitioners (NPP) include Nurse Practitioners, Physician's Assistants, Certified Nurse Midwives, Certified Nurse Anesthetists, and Certified Clinical Nurse Specialists. The numerator for each percentage is the sum of Medicare payments for NPP services only and the denominator is the sum of Medicare payments for services by physicians or NPPs.

Total payments to NPPs for independently billed services increased from just over $80 million in 1992 to almost $134 million in 1998 reflecting a 66 percent increase over time. These payments, however, represent a small fraction of the total Medicare payments to physician and

non-physician practitioners. The largest share of Medicare dollars spent on NPP services was for services provided to beneficiaries residing in the most remote counties. Additionally, the largest share of NPP services was provided to residents of whole-county HPSAs.

Section 4.

POLICY IMPLICATIONS AND ISSUES

The analytic results contained in this report provide a descriptive framework regarding Medicare payments for physician services for Medicare beneficiaries in non-metropolitan areas, with a focus on the special payment policy offering 10 percent bonus payments for services provided in HPSAs. These analyses have identified some trends with implications for future Medicare payment policy for rural providers. In this section, we synthesize our findings and consider some of the issues they pose regarding access to physician services for rural beneficiaries that might be addressed in further analyses in this project.

MEDICARE SPENDING FOR PHYSICIAN BONUS PAYMENTS

While Medicare spending for physician services to non-metropolitan beneficiaries increased steadily during the 1990s, this trend did not translate into the same growth pattern for bonus payments. After substantial increases during the first half of the decade, total bonus payments began to level off between 1994 and 1996 and then declined by 13.3 percent between 1996 and 1998. This trend also is reflected in bonus payments measured as a percentage of basic Medicare payments, which were 0.5 percent of basic payments in 1992, 0.7 percent in 1994, 0.6 percent in 1996, and 0.5 percent in 1998. Of note, these percentages of less than 1 percent highlight that bonus payments represent an extremely small share of total Medicare costs for physician services to non-metropolitan beneficiaries.

As expected, the majority of bonus payments for non-metropolitan beneficiaries were paid for those residing in HPSAs, but substantial shares also were paid for those in non-HPSA locations. For each of the four years studied, close to an estimated 60 percent of bonus payments were made for physician services to beneficiaries residing in whole-county HPSAs, and 30 percent were for beneficiaries in partial-county HPSAs. A relatively substantial balance of 10 percent of bonus payments was attributable to services for beneficiaries not residing in non-HPSA counties. An unknown percentage would be added to this portion for beneficiaries in partial-county HPSAs but not in the HPSA portion of the county (which would be subtracted

from the percentage for partial-county HPSAs). These findings suggest that bonus payments may have contributed to access on a broader geographical scale than the strict limits of the HPSA boundaries, possibly reflecting the distances that rural beneficiaries often travel for care.

Looking at bonus payment trends by HPSA designation, we find a decrease in bonus payments for non-HPSA counties between 1992 and 1998, which would mitigate some of the possible improvements in access for beneficiaries residing in these counties. For example, the share of total bonus payments for non-metropolitan beneficiaries that were paid for those residing in non-HPSA counties declined from 15.0 percent in 1992 to 8.8 percent in 1998 (a 41 percent decrease). Expressed differently, bonus payments for non-HPSA counties were halved from 0.2 percent of basic Medicare payments for physician services in 1992 to 0.1 percent in 1998.

To examine regional variations in bonus payments for non-metropolitan beneficiaries, we calculated average per capita payments by HHS region for both basic Medicare physician payments and bonus payments. The overall steady growth in basic physician payments over time also was found within each region, although there was substantial variation across regions for each year in the average per capita payments. For per capita bonus payments, the regions varied substantially in both the average levels of payments and trends over time. The New York, Philadelphia, Atlanta, Chicago, and Dallas regions reflected the overall pattern of increased per capita bonus payment from 1992 to the mid-1990s followed by a decline through 1998. The average per capita bonus payment increased over time in the San Francisco region, and remained fairly constant in the other four regions. The Boston and Seattle regions had the lowest average bonus payments of $1 per beneficiary or less. These findings suggest there may be systematic regional differences in how providers or carriers have approached use of the bonus payments, but additional analysis would be needed to identify underlying behavioral mechanisms.

BONUS PAYMENTS FOR PRIMARY CARE SERVICES

Two distinct aspects of bonus payments for primary care were considered in our analysis: payments to primary care physicians and payments for primary care services. In both cases, we found that bonus payments had targeted primary care, which were encouraging findings with respect to the goals of policy makers when this program was introduced at the start of the decade. For example, 55.9 percent of total bonus payments in 1992 were paid to primary care providers,

although their shares decreased steadily over time to reach 49.7 percent in 1998. The recent study by Ricketts, et al. (2000) observed a decline in family practice physicians, one of the three physician specialties defined as primary care, which supports this trend in declining shares for primary care physicians.

In 1992, payments for primary care services represented 14.0 percent of total basic Medicare payments for physician services and 29.7 percent of total bonus payments for beneficiaries residing in non-metropolitan counties. By 1998, these shares had grown to 18.6 percent of total Medicare payments and 37.0 percent of total bonus payments. Thus, both the levels and growth trends were higher for bonus payments made for primary care services, compared to overall physician payments.

ROLE OF NON-PHYSICIAN PRACTITIONERS

The analysis of payments for non-physician practitioner services indicates that NPP services that have been billed directly to Medicare have been a very small, but growing fraction of Medicare payments for physician/NPPs services (sum of physician and NPP services) to Medicare beneficiaries in non-metropolitan areas. NPP payments in 1992 were 1.6 percent of total payments for physicians/NPPs, and had increased to 1.8 percent of the total by 1998. By county category, NPP payments were only 1.5 percent of physician/NPP payments in counties adjacent to an MSA with a city of 10,000 population (most urbanized) and were 2.2 percent in the most remote counties with no town and 2.4 percent in frontier counties. However, we did not find much variation in the share of NPP payments based on the HPSA designation of counties, which would be expected to the extent that NPPs were more important providers of care in the underserved areas represented by HPSAs. Although slight differences in shares between whole-county HPSAs and non-HPSA counties existed in the early years, they disappeared by 1998.

An important limitation to our analyses of Medicare payments for NPP services is that services NPPs provide are likely to be billed to Medicare by physicians rather than by the NPPs. This is the case because physicians can be paid 100 percent of the Physician Fee Schedule rate whereas NPPs would be paid only 85 percent of this rate if they billed independently. Thus, physicians and NPPs have an incentive for the physicians to submit Medicare claims, and then to pay the NPPs separately. Additionally, services by NPPs working in clinics or group practices,

RHCs, FQHCs, or C/MHCs are billed by the clinic rather than by the individual NPPs. As a result, the Medicare claims data for services directly billed by NPPs represent only a small fraction of Medicare spending for NPP services.

DISCUSSION

The trends in physician bonus payments during the 1990s offer some encouraging policy insights at the same time they raise issues regarding the ongoing effectiveness of the bonus payment program. Some evidence was found that this program has been successful in supporting primary care providers and services, and possibly, has enhanced services for beneficiaries residing in the more remote parts of our country, especially those in HPSAs. On the other hand, low levels of bonus payments in general, coupled with declines in those amounts since 1994, bode poorly for its future potential to support physicians practicing in rural areas and, thus, to protect access for rural Medicare beneficiaries. For these goals to be achieved, physicians must use the bonus payments, yet they clearly are not taking advantage of the extra payment amounts available to them. If bonus payments continue to decline in the face of steady increases in basic Medicare payments for physician services, their effects will be further diluted.

Factors that could be contributing to these trends in bonus payments include, for example, the extent to which physicians are knowledgeable about bonus payments, the perceived value of the payments to physicians, and effects of administrative procedures on the ease of receiving the payments. Because the bonus payments are administered by the Medicare carriers, policies and procedures for informing physicians, administering payment requests, and auditing appropriateness of payments may vary widely across carriers, which could explain some of the observed regional variation. With the data used for our analyses, we are limited in our ability to explore the relative contributions of such factors to the declining trends in bonus payments.

When considering the policy option of extending bonus payments to NPP services, the small share of Medicare payments for NPP services makes it clear that such a policy would have limited short-term financial impact for Medicare, even if NPPs submitted claims for all eligible services. One might speculate, however, that NPP bonus payments would grow over time because these payments might be a stronger financial incentive for these practitioners than for physicians.

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